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Witness: Nick Voris
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Case No. ET-2021-0151 / ET-2021-0269
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MISSOURI PUBLIC SERVICE COMMISSION

CASE NOS.: ET-2021-0151 / ET-2021-0269

SURREBUTTAL TESTIMONY

OF

NICK VORIS

ON BEHALF OF

EVERGY METRO, INC. D/B/A EVERGY MISSOURI METRO AND EVERGY MISSOURI WEST, INC. D/B/A EVERGY MISSOURI WEST

Kansas City, Missouri
September 2021

SURREBUTTAL TESTIMONY

OF

NICK VORIS

Case No. ET-2021-0151/0269

Q: Please state your name and business address.

A: My name is Nick Voris. My business address is 1200 Main, Kansas City, Missouri 64105.

Q: By whom and in what capacity are you employed?

A: I am employed by Evergy and serve as the Senior Manager, Electrification Products and Services. My team is responsible for developing and executing products and services related to beneficial electrification and is part of the Energy Solutions team led by witness Kimberly Winslow.

Q: Are you the same Nick Voris who supported portions of the "Evergy Transportation Electrification Portfolio Filing Report" ("Report") filed in this proceeding with the Application?[1]

A: Yes, I am.

Q: On whose behalf are you testifying?

A: I am testifying on behalf of Evergy Missouri Metro and Evergy Missouri West (collectively, "Evergy" or "Company").

Q: What is the purpose of your rebuttal testimony?

A: The purpose of my testimony is to respond to certain positions presented in the direct testimony filed on August 16, 2021, by witnesses for the Missouri Public Service

[1] The Report was initially filed with the Application on February 24, 2021 and updated May 7, 2021. Supplemental information was filed with the Commission on July 16, 2021.

Commission ("Commission") Staff ("Staff"), the Missouri Office of the Public Counsel ("OPC"), and ChargePoint, Inc. ("ChargePoint").

I. BACKGROUND

Q: Have you or someone with Evergy responded to every position, analysis, assertion or conclusion proposed by other parties to this docket?

A: No, we have focused our surrebuttal on the most important aspects of the testimony based on our review. As such, if we have not specifically addressed any matter contained in the testimony of the other parties' witnesses, that should not be construed as agreement with their position.

Q: Please provide a brief overview of your surrebuttal testimony.

A: My testimony focuses on the rationale and design of Evergy's transportation electrification ("TE") portfolio:

- With respect to the Clean Charge Network ("CCN") expansion, I respond to Staff assertions that Evergy has not presented evidence to justify the proposed expansion by summarizing the station cap increase requests included in the Application, highlighting the role of the utility in providing equitable access, explaining how this expansion complements the Commercial Rebate Program, and clarifying various aspects of the KC Streetlight Corridor Pilot.
- With respect to the Residential Rebate Program, I respond to Staff and OPC assertions that Evergy's program is not a reasonable use of ratepayer funds because it does not mandate time-of-use ("TOU") rates and has an underdeveloped customer education program. My testimony highlights

program's purpose and benefits, describes how the program will inform future grid management activities, explains why Evergy has elected to not require either "smart" EV charging equipment or enrollment in TOU rates, and describes learning objectives and associated approach to education and marketing activities.

- With respect to the Developer Rebate Program, I respond to Staff assertions that Evergy's program does not ensure future homeowners are educated on outlet use or use the outlet at all by clarifying the objectives and educational goals of this program.
- With respect to the Commercial Rebate Program, I respond to Staff and OPC assertions that the program does not consider distribution costs, is oversized, and will pull demand away from existing CCN stations. My testimony provides Evergy's program objectives, explains the modeling performed to develop the program budget, and highlights how this program works with the CCN expansion to provide equitable access across Evergy's Missouri territories.

II. RESPONSE TO TESTIMONY

(1) Clean Charge Network Expansion

Q: What are Evergy's objectives with the proposed Clean Charge Network expansion?

A: Evergy is committed to providing broad customer access to EV charging throughout our service territory. To that end, Evergy has proposed rebates to encourage private investment through our Commercial Rebate Program complemented by a very limited expansion of

the CCN. In our filing, Evergy requested increases to the existing caps on the number of installed charging stations[2] Evergy is allowed under Schedule CCN.

- In Missouri Metro, Evergy requested an increase of 100 stations (400→500) above the existing cap ordered by the Commission in docket ER-2018-0145. Fifty of these stations are planned to be utilized by the KC Streetlight Charging Project in partnership with the Metropolitan Energy Center. Another four of these stations are envisioned to support the emerging use case of transportation network company ("TNC")/rideshare. The other 46 stations provide operational flexibility for Evergy to utilize (or not) at its discretion.
- In Missouri West, Evergy requested an increase of 50 stations (250→300) above the existing cap ordered by the Commission in docket ER-2018-0146. Twenty-four of these stations are planned to be utilized in highway corridor locations along secondary and/tertiary highways. The remaining 26 stations provide operational flexibility for Evergy to utilize (or not) at its discretion.

Evergy's hybrid approach supporting both utility and private ownership of EV charging infrastructure is common within the utility industry, in-part because private third-party investors do not approach site selection from the same perspective as regulated utilities such as Evergy. Rather than being concerned with establishing an "ecosystem" of charging to provide reliable service to all customers, including underserved areas such as

[2] This testimony will refer to charging ports, stations, and sites. "Port" refers to the connector that attaches to the vehicle during fueling and is analogous to a gas pump nozzle. "Station" is analogous to the gas pump itself and can contain multiple ports (typically, two ports for Level 2 or 1 port for DCFC). "Site" refers to the physical location of the charging station(s).

secondary and tertiary highway corridors, private investment is typically focused on a narrower range of goals such as individual site profitability or providing a beneficial service to customers and employees. One such example, Volta, states that their stations are "in prominent public locations that match the behavior and commerce of visitors".[3] A second example, EVgo, also touts site host partnerships with grocery stores, retail, gas stations and hotels. In contrast, Evergy has stated that any new CCN stations would focus on filling gaps in the market and serving underserved communities, such as "commercial locations in underserved communities, secondary and tertiary highway corridors, and potential designated charging to support rideshare and TNC [transportation network companies] use cases".[4]

In summary, Evergy's continued, modest investment in the CCN benefits all customers by:

- Ensuring charging services are available to a broader range of customers than would be served by the proposed Commercial Rebate Program, which may be utilized by investors who have a narrower range of business objectives, and
- Continuing to reduce range anxiety, increase EV adoption and, moreover, increase electric sales to put downward pressure on rates for all Evergy customers over the long-term.

[3] https://investors.voltacharging.com/overview/default.aspx
[4] Application, p. 34.

Q: Why did Evergy's CCN cap increase request include 72 unidentified and unbudgeted stations (26 MO West + 46 MO Metro)?

A: Evergy requested additional cap space to provide operational flexibility in light of the complexities and schedule constraints inherent to the regulatory process of raising the tariff caps. The proposed five-year rebate programs will occur during a period when EVs will become much more available and accessible to Evergy's customers. Given the tremendous momentum towards an increasingly electrified transportation sector, it is reasonable to assume opportunities will emerge for Evergy to extend benefits to a broader range of customers whose needs are better met by the CCN than by the Commercial Rebate Program. Evergy is simply requesting the operational flexibility to pursue these emerging opportunities should they materialize and be able to respond to unforeseen needs that may arise.

Regarding the capital cost of these unidentified stations, Evergy agrees with the range provided in Staff's testimony (i.e. $2.2M to $4.9M). It should be noted that the exact cost and project execution details would be subject to a prudence review during a future general rate case as explained in testimony from Mr. Ives.

Q: Does Evergy share OPC's concern that existing CCN stations will be "cannibalized" by the charging stations that result from the proposed portfolio (e.g. Streetlight, Commercial Rebate Program, etc.)?[5]

A: No. Evergy used a wholistic, forward-looking approach to portfolio design that considers projected near-term (2025) public charging needs vis-à-vis the charging infrastructure potentially resulting from the Commercial Rebate Program and CCN expansion. The net

[5] Marke Rebuttal, pp. 18-22.

result is an ecosystem of public charging stations suitable for the number of EVs in EPRI's medium adoption forecast.

Q: Does Evergy agree with OPC's assertion that Evergy's service territory currently has more public charging ports than EVs?[6]

A: No. In Evergy's workpaper "Combined Program Budgets" developed last fall in 2020 and included with its Application, Evergy assumed there would be 3,065 EVs in its Missouri service area at year-end. This value was selected because it is equal to EPRI's "low" forecast scenario for 2021. At the same time, Evergy utilized the Department of Energy's Alternative Fuels Data Center website to estimate the current number of public charging ports at 1,373, which is far fewer than the number of EVs.

This is a good opportunity to highlight that with respect to EV supply and demand, the past is not the future. If EV adoption continues to track EPRI's medium adoption forecast, the number of EVs in Evergy's Missouri service territory will increase by a factor of six during the proposed program period (i.e. through year-end 2026). While it remains to be seen whether this forecast comes to fruition, it is notable that—as explained in Mr. Caisley's testimony—the pace of EV adoption in Evergy's service territory is tracking within one year of the forecast EPRI prepared in 2015 to support CCN development. Further, it would be illogical to not expect dramatically increased consumer demand given what's happening on the supply-side. Consider:

[6] Marke Rebuttal, pp. 9, 18

- In addition to establishing all-electric vehicle production goals, legacy automakers have announced plans to invest well over $30B towards domestic EV manufacturing by 2025.[7]
- Almost 100 pure battery electric vehicles are set to debut by the end of 2024.[8]
- While Tesla's promise of a $25K EV in the near-term continues to attract media attention, at least one automaker is already within 10% of that price point: the 2022 Nissan Leaf starts at $27.4K.[9]

Q: Did Evergy propose CCN Highway Corridor sites outside its certificated service territory as suggested by Staff?[10]

A: Yes, though inadvertently. During the technical conference process, Evergy submitted 11 potential Highway Corridor site locations for expansion of the Clean Charge Network. Upon further investigation and as noted in Staff's testimony, four of the candidate sites reside outside of Evergy's service area. Evergy will not consider these sites as part of its list of potential hosts. This non-exhaustive list was intended to be illustrative of the many viable secondary and tertiary highway corridor site options within Evergy's service territory that would enable intra- and interstate travel via EV.

[7] See Slide 8 from "MPSC Technical Planning Session #2", June 11, 2021, included in Staff Rebuttal testimony (PDF p. 46).
[8] https://www.consumerreports.org/hybrids-evs/why-electric-cars-may-soon-flood-the-us-market-a9006292675/
[9] https://www.edmunds.com/nissan/leaf/
[10] Staff Rebuttal, pp. 25, 28, 31.

Q: ChargePoint recommends Evergy allow CCN site hosts to choose their own equipment and set their own pricing.[11] Can you respond?

A: Evergy's CCN offers site hosts (i.e. the entity with jurisdiction over the location of the charging stations) a turnkey EV charging solution. As such, Evergy is the owner-operator of the charging stations and selects the equipment to be installed. Evergy has installed more than 900 EV charging stations throughout its service territory using a single EV charging system provider, ChargePoint. Provided the continuation of mutually agreeable business terms, we intend to continue utilizing this approach because standardization provides multiple advantages for the utility, site hosts and EV drivers, including:

- Simplified network monitoring
- Cost savings resulting from
  - Standardized engineering and construction designs
  - Streamlined installation, as installers only need to be trained and knowledgeable of a single provider's product
- Cohesive user experience for EV drivers
- Familiar payment process at each EV charger

Pricing for the CCN is regulated and set as defined in the tariff, Schedule CCN.

[11] Wilson Rebuttal, p. 17.

Q: Given OPC's concerns about additional charging stations shifting demand away from the existing CCN, why is Evergy participating in the KC Streetlight Corridor Pilot?

A: Evergy's participation reflects the alignment between Evergy's goals for the CCN and the stated streetlight project objective, which is to:

> Substantially increase access to electric vehicle (EV) fueling in Kansas City, with attention to future usage as well as equity concerns, while saving time and money by combining charging stations with existing streetlight infrastructure[12]

As further explained in the above referenced presentation to parties by the Metropolitan Energy Center, this pilot is intended to determine the viability of streetlight charging and potentially pave the way to private sector investment. Through its limited capital investment and the ability to assume ownership and operation of the charging stations created by this pilot, Evergy is an indispensable member of the pilot streetlight project team and the learnings from this can be substantial to understand how to meet underserved EV driver needs.

Q: What costs does Evergy expect to incur from the KC Streetlight Corridor Pilot?

A: As explained in the Application, Evergy's share of the capital costs required to install between 30-50 streetlight-mounted charging stations is $760,000, a considerable discount since project funding is providing the charging stations. Once this project is complete, Evergy will assume ownership and operation of these stations as part of the CCN. Based

[12] See Slide 1 of Attachment 3 from "MPSC Technical Planning Session #4", June 25, 2021, included in Staff Rebuttal testimony (PDF p. 94) (emphasis added).

on Evergy's experience, annual O&M costs are expected to be approximately $160 per station.

Q: Is Evergy willing to develop its own metrics and learning objectives for the KC Streetlight Corridor Pilot and report to the Commission after three years as recommended by Staff?

A: Yes. In addition, Evergy is willing to share the results of this pilot with the Commission and plans to use this opportunity to also share with other utilities and stakeholders.

(2) Residential Rebate Program

Q: What are Evergy's objectives for the Residential Rebate Pilot Program?

A: The Residential Rebate Program is a pilot that incentivizes existing EV owners to transition from Level 1 charging (120V) to Level 2 charging (240V) in their homes. In so doing, this program provides several benefits to both customers and Evergy.

- Level 2 charging adds approximately 25 miles of range per hour while Level 1 charging adds about 4 miles per hour.[13] Consequently, transitioning customers from Level 1 to Level 2 charging dramatically reduces the amount of time customers must charge and enables them to receive the energy they need during off-peak hours. By reducing the number of hours a customer must charge, both the customer and utility gain significant flexibility in terms of when a customer needs to initiate a charge. As TE

[13] https://www.chargepoint.com/blog/level-your-ev-charging-knowledge/.

matures, this flexibility will become increasingly important to grid management.

- Since Level 2 charging occurs at a higher power level than Level 1 charging (6.6-9.6kW vs ~1.5kW), Level 2 charging is more readily identified ("disaggregated") within customer AMI data. Shifting customers to Level 2 charging and requiring participants to provide detailed vehicle data will enable Evergy to develop and refine its AMI data disaggregation models. Beyond this filing, these models will serve as invaluable tools for grid analysis, grid management and future program design.
- Detailed knowledge of participant charging capabilities and habits presents an opportunity for personalized, impactful customer interactions. A key goal of this program is to leverage the data, tools, and insights to create periodic, bespoke analyses that educate participants on their recent charging behavior (e.g. frequency, duration, on-peak versus off-peak), the associated environmental impact, and the potential advantages of subscribing to an existing TOU rate. These personalized communications will also be used to ensure a recipient understands how to program his/her specific vehicle to charge off-peak and encourage the recipient to "set it and forget it".
- Finally, Level 2 charging is approximately 7-15 percent more energy efficient than Level 1 charging.[14] As a result, transitioning existing EV

[14] Application, Appendix D.

owners from Level 1 to Level 2 charging will decrease their overall amount of energy consumption.

Q: How was Evergy's Residential Rebate Program received by Parties providing rebuttal testimony?

A: Staff recommends the Commission reject the proposed pilot program based on the following concerns[15]:

- Potential for free ridership.
- Lack of requirement for participants to enroll in a residential TOU rate.
- Potential for customers to install in-home charging greater than 6.6kW.
- Lack of evidence of what education or marketing will cause customers to participate in "managed" charging.
- Potential for participants to increase wholesale energy and/or capacity costs.

OPC shares Staff's concern that Evergy's program does not require participants to enroll in a residential TOU rate and seems to imply that EV drivers should be subject to mandatory TOU rates.[16] ChargePoint recommended program approval with certain modifications.

Below I discuss these items with the exception of avoided capacity cost and EV charging loadshape considerations, which are addressed in Mr. Nelson's testimony.

Q: Does Evergy's Residential Rebate Program contain elements to minimize free ridership?

A: Yes, Evergy designed the program with numerous facets to minimize the likelihood of free riders. For example, only EV owners are eligible. Also, the rebate amount ensures that

[15] Staff Rebuttal, pp. 1, 15.
[16] Marke Rebuttal, p. 16.

participants have "skin in the game" because it is capped at the lesser of $500 or 50 percent of actual costs. A third and important program requirement is that not only must rebate recipients be willing to provide detailed vehicle information, but they must also be willing to sign a customer agreement that enrolls them as a participant in a pilot project wherein Evergy will use their information to closely examine their charging behaviors and—if necessary—attempt to influence their charging behavior.

Q: Why doesn't Evergy require rebate recipients to enroll in a residential TOU rate as recommended by Staff and OPC?

Evergy agrees with Staff that TOU rates will be a key tool for minimizing grid impacts of transportation electrification and plans to introduce new and revised residential TOU rates in the 2022 general rate case. Evergy will educate and encourage rebate recipients to enroll in a TOU rate during the rebate application process. Moreover, rebate recipients will be periodically reminded of the benefits of TOU based on their specific charging behaviors and needs in the personal communications described in the program objectives.

While Evergy will use this program to educate customers on TOU and encourage TOU rate enrollment, we expect there will always be a subset of EV-owners who are uninterested in TOU rates due to specific consumption requirements or other reasons. Such disinterest, however, does not mean these customers are unwilling to charge overnight. Since an EV can easily be programed to charge within specified hours via the vehicle's smart phone app or on-board interface, Evergy believes it can effectively shift customers to off-peak charging by ensuring customers know how to program their cars to automatically charge overnight and/or during the weekend while at home ("set it and forget it"), are informed about their charging needs/behaviors, and understand the environmental

and other advantages of off-peak charging. Learning whether and how these non-TOU customers can be influenced are important objectives of this limited pilot program.

Q: Does Evergy agree with Staff's assertion that Evergy's cost benefit analysis is flawed because the residential rebate allows customers to charge at faster rates than Evergy included in its cost benefit analysis?

Evergy's modeling assumed a charging level of 6.6 kW because this is a relatively common A/C charging capability. While newer EVs are capable of A/C charging levels greater than 6.6 kW, Evergy's program requires installation of a NEMA 14-50 outlet, which is rated for 50 amps. This requirement is a de facto cap on charging level at 9.6 kW.

Staff decries this as being capable of delivering energy far in excess[17] of the 6.6 kW assumed in Evergy's modeling and that this may cause energy and capacity cost increases. Staff assumes that residential Level 2 charging is worse than Level 1 charging because of the higher charging rate that would occur during peak times. But this line of thinking completely dismisses the time-of-day and days-per-week load shifting flexibility that accompanies higher charging rates which is not available with Level 1 charging. Evergy witness Nelson further addresses Staff's unsupported EV charging loadshape projections and demonstrates that no conclusions can be drawn from Staff's loadshape analysis.

Incidentally, this topic highlights the necessity of customer education and outreach by the utility. It would be a mistake to yield consumer messaging to the automakers, who

[17] Staff Rebuttal, p. 15.

are principally concerned with selling EVs and—increasingly—OEM-branded home charging stations, some with ratings at or exceeding 11.5 kW[18].

Q: Has Evergy provided learning objectives or metrics for this program?

A: Yes. Evergy provided draft learning objectives for the proposed Residential, Commercial and Developer rebate pilot programs as well as the proposed fleet and transit rates in response to Staff Data Request 0003. See **Schedules NV-1** and **NV-2**, respectively, attached hereto. Additionally, Evergy provided objectives, evaluation and data collection goals, and example key performance indicators in an Excel-based "Program Matrix" developed at Staff request and provided to parties during Technical Conference #3 on June 21, 2021.[19] Incidentally, the materials for this technical conference also included details of Evergy's approach to marketing, education, and outreach[20]. Although this topic was not discussed on June 21, 2021 due to time constraints, Evergy revised the slides and presented the information during the final technical conference on July 12, 2021. During this presentation, an Evergy subject matter expert explained that as a matter of standard procedure, Evergy fully develops the education, marketing, and outreach plans *after* regulatory approval so as to understand the approved set of goals, objectives, and constraints.

[18] https://www.ford.com/buy-site-wide-content/overlays/mach-e-overlays/ford-connected-charge-station/
[19] Although Staff did not include the matrix itself, this topic is introduced on Slide 5 from "MPSC Technical Planning Session #3", June 21, 2021, included in Staff Rebuttal testimony (PDF p. 62).
[20] See Slides 10-13 from "MPSC Technical Planning Session #3", June 21, 2021, included in Staff Rebuttal testimony (PDF pp. 66-69).

Q: Staff asserts that education and marketing will be ineffective in causing residential customers to participate in managed charging. What education or marketing will cause residential customers to participate in "managed" charging?

The Residential Rebate Program aims to answer this question. During the pilot, Evergy plans to use a traditional behavior marketing campaign development process, as presented during the technical conference on July 12, 2021, to move customers' understanding, motivations and behaviors.

As part of the pilot program's marketing campaign, we will:

- Understand the target audience(s) to realize demographic and psychographic motivations that will influence their behaviors
- Use our audience analysis to develop marketing and communication materials that resonate with participants' lifestyle and motivate them to make behavioral changes
- Use marketing tactics to inform potential and current participants of the benefits of off-peak charging, how to program their cars or chargers to charge off-peak ("set it and forget it"), and the associated benefits
- Generate and utilize disaggregated AMI data to determine customer charging needs and behavior
- Utilize personalized communications to reinforce positive behaviors and educate customers on their actual charging behaviors, the associated environmental impact, and the potential benefits of TOU
- Determine whether/how-much these customer communications modified charging behavior in the absence of a financial incentive

- Identify the required modifications if the desired results are not achieved, including the possibility of new incentives (bill credits, etc.)

The pilot is designed to help prepare Evergy for an increasingly electrified future where Level 2 home charging will be ubiquitous. The time is now to learn these lessons. Once approved by the Commission, the Evergy marketing, analytics, and product teams will finalize Evergy's analysis, education, and outreach strategies in a manner that incorporates the final approved program information as has been standard practice for Evergy's Commission approved programs, including 11 MEEIA programs and the successful Time of Use rate.

Q: Does Customer Education represent the bulk of the $1.7M budget for Customer Education and Program Administration, as asserted in Staff testimony?[21]

No. As indicated in Evergy's response to Staff Data Request 0005 and repeated in the slides presented at the technical conference on July 12. 2021[22], the Customer Education budget represents less than half of the total budget for Customer Education and Program Administration (i.e. $0.75M out of $1.70M). Importantly, this budget will support **all** rebate and rate programs proposed by Evergy, not just the Residential Rebate Program.

Q: Why doesn't Evergy's proposed program require a smart Level 2 charger, as ChargePoint recommends?[23]

A: Evergy's rebate for the 240V outlet provides customers the greatest flexibility in how they manage their EV's Level 2 charging requirements. Evergy is not requiring a "smart" Level 2 charger or any specific EV technology for several reasons:

[21] Staff Rebuttal, p. 7.
[22] These slides were not included with Staff's Rebuttal testimony.
[23] Wilson Rebuttal, pp. 3, 8-10.

- Today many EV models come with 240V compatible "cord-sets" or a Level 2 charger. Given this, we believe that requiring a "smart" or communicating EV charger exclusively for this program is an unnecessary expense for the customer.
- A "smart" EV charger requires the customer to have a reliable internet connection and WIFI communications, which may be difficult to establish and maintain in the customer's garage.
- The EV's on-board charge management system often has more charge management capabilities than a third party "smart" charger. For example, the on-board system knows the exact state-of-charge of the battery whereas the "smart" EV charger can only control the level of power available to the EV.

Some utilities' residential EV charger programs are requiring "smart" chargers for their submetering and the ability to separately bill the customer for their EV charging. These programs are typically limited to a small number of EV charger brands to minimize system implementation issues. Evergy believes this to be a short-term technological solution and may not be feasible to implement with a large number of EV charger manufacturers or scalable for a large number of EVs. Evergy believes the long-term solution will be to identify EV charging usage through disaggregation of AMI data and to provide any charge management signals through the vehicle's onboard systems. Evergy is working with our meter data management provider to develop disaggregation algorithms to identify EV charging from AMI interval usage data and looks forward to the data and insights provided by the Residential Rebate Program.

Q: Do you have any other thoughts on the proposed Residential Rebate Program?

A: As noted repeatedly throughout our application and in the technical conferences, Evergy views transportation electrification and the role of this portfolio through a multi-faceted perspective. Like every other element of Evergy's TE portfolio, the Residential Rebate Program is a waypoint, not a destination. As a percentage of total light-duty vehicles in Evergy's Missouri service area, EV penetration is currently about 0.5%. Although the basis for this rebate might not exist beyond the program period, the capabilities and lessons learned from this pilot will benefit both customers and Evergy far beyond the proposed portfolio's five-year duration.

(3) Developer Rebate Program

Q: What are Evergy's objectives for the Developer Rebate Pilot Program?

A: The Developer Rebate Program is a pilot designed to reduce the costs associated with enabling Level 2 (240V) EV charging at home, which provides customers with the ability to charge EVs faster and more efficiently than Level 1 (120V) charging as detailed in the previous section. By targeting new homes, Evergy will help to ensure homes are pre-wired for Level 2 EV charging during construction, which will save costly upgrades for homeowners later.

The program also seeks to enhance relationships with home developers and educate builders about the benefits of EV-ready construction. Beyond this temporary incentive, our goal is for developers to adopt this EV charging circuit as a standard practice.

Q: How did the parties respond to Evergy's proposed Developer Rebate Program?

A: Staff and OPC do not support this pilot program.[24,25] ChargePoint recommends approval of the program.[26] Primary concerns of Staff and OPC are free ridership, use of ratepayer funds outside "the cost of service" that might be better handled as a "code issue", and the possibility the rebated outlet will never be used for the intended purpose.

Q: How do you respond to these concerns?

A: The primary focus of the Developer Rebate Program is the developer. Evergy's five-year proposal includes $87,500 for 350 rebates ($250 per) split roughly 65%/35% between Missouri Metro/West. The purpose of this rebate is to attract, engage, and educate developers about EV charging and help them prepare for or perhaps even support future building code changes.

As part of the installation, Evergy will require the developer to place a branded sticker on the outlet to communicate to the homeowner that the 240V outlet is available specifically for EV charging. Additionally, new homeowners will receive information about the purpose of the installed outlet, benefits of Level 2 EV charging and optional TOU rates.

(4) Commercial Rebate Program

Q: What are Evergy's objectives for the Commercial Rebate Program?

A: The Commercial Rebate Program is a pilot designed to reduce the costs associated with EV charging installations at a variety of locations (highway, public, workplace, fleet, and multi-family) by providing a rebate toward the customer-side, make-ready infrastructure

[24] Staff Rebuttal, pp. 1, 16.
[25] Marke Rebuttal, p. 17.
[26] Wilson Rebuttal, p. 20.

and equipment costs. The program will also allow Evergy to better understand where EV charging is occurring on its system, which will enable further load analysis and customer targeting. The program design is intended to be future-looking and incentivize smart, network-capable chargers to enable controllable load management regardless of what type of Level 2 or DC fast charger ("DCFC") is installed.

Q: How did the parties respond to Evergy's proposed Commercial Rebate Program?

A: Staff and OPC do not support this program [27,28] and primarily assert that the program does not consider distribution and/or transmission costs, is oversized, will pull demand away from CCN stations. and does not consider free ridership.

ChargePoint recommends approval of the program[29] without the current requirement for recipients to agree to participate in future demand response events and the requirement for recipients to provide Evergy access to charger-level utilization data.

Q: Is the Commercial Rebate Program oversized?

A: No. Evergy sized the Commercial Rebate Program budget to align with the projected need for public, workplace, and fleet charging infrastructure according to the following methodology:

1. Determine Current State

Using information from the Department of Energy's Alternative Fuels Data Center, Evergy estimated the current quantity of charging ports serving various use cases, inclusive of the CCN (e.g. Workplace/Fleet Level 2, Public Level 2, etc)

[27] Staff Rebuttal, p. 1
[28] Marke Rebuttal, p. 18
[29] Wilson Rebuttal, pp. 3, 11

2. Project Future Need

Using EVI-Pro Lite, a tool developed by the National Renewable Energy Laboratory to estimate the infrastructure requirements associated with a given EV population, Evergy projected the number of charging ports required to support EPRI's medium EV adoption scenario as of year-end 2025 (11,353 – MO Metro; 5,959 – MO West). Since the outputs of EVI-Pro Lite are limited to public and workplace charging, Evergy also considered the portion of the projected EV population that would rely on charging at multifamily buildings as well as the growing need for fleet charging infrastructure.

3. Establish Program Budget

Evergy's budgets for each use case are informed by the gap between the current number of ports and the projected future need, looking primarily at medium EV adoption scenarios in 2025.

As you can see, Evergy has applied a rational and future-looking approach based on near-term projections of EV populations and the associated charging infrastructure needs provided by EPRI and the DOE, respectively. Beyond this methodology, from a philosophical perspective it is important to note that Evergy's program design requires site hosts to bear meaningful upfront and ongoing costs to maintain the networked charging stations required by the program[30]. Consequently, developers and site hosts will be motivated to optimize site location and configuration relative to use case. In other words, the modesty of Evergy's rebate amounts and line extension allowances relative to the

[30] See Slide 11 from "MPSC Technical Planning Session #4", June 25, 2021, included in Staff Rebuttal testimony (PDF p. 87).

potential capital and ongoing costs of charging stations lower the probability of free ridership and make the Commercial Rebate Program inherently self-limiting.

Q: Is Evergy concerned about oversaturating its service territory with charging stations?

A: No. As explained in the previous responses, the proposed budget is based on the projected need for commercial charging infrastructure given the near-term EV adoption forecast. Additionally, recipients bear significant upfront and ongoing costs even after receiving rebates and line extension allowances (if applicable), which are certain to influence whether and where new charging stations are pursued. From a more tactical perspective, the TE pilot program tariff "Schedule TE" requires that highway corridor sites include at least two DCFC chargers and be at least 25 miles from the next closest DCFC site along the same highway.

Q: Does the Commercial Rebate Program budget include an allowance for potential additional distribution upgrades resulting from the charging stations?

A: No. Evergy did not propose an "all in" budget that considers both sides of the customer's meter. This type of approach was not observed in Evergy's utility benchmarking that was performed to support program design, which included Ameren's Charge Ahead program and other programs of similar design (i.e. provision of rebates for customer-side project costs).

If a given charging station necessitates utility-side upgrades, the allocation of costs between rebate recipient and ratepayers will proceed according to existing line extension policy, including the standard allowance previously established for infrastructure serving EV charging stations. Although such costs were not included in the proposed Commercial

Rebate Program budget, they were considered in the cost effectiveness evaluation as explained in Mr. Nelson's testimony.

Q: What about ChargePoint's comment that Evergy should not require Commercial Rebate Program rebate recipients to agree to participate in demand response events?[31]

A: ChargePoint makes a good point here. Since EV drivers who charge at DC fast chargers are likely time-limited or time-sensitive, Evergy is amenable to a plan modification that would add the requirement for rebate participants to agree to participate in future demand response events for Level 2 chargers only. In the near-term, Evergy does not anticipate regular demand response events to be called for rebate recipients but, when one is called, we envision load control by throttling back the charging speed by 50% versus shutting down the capability to charge completely, thus minimizing the impact on EV drivers' charging. Participation in demand response events will be clarified in the customer agreement developed for the Commercial Rebate Program.

Q: ChargePoint also asks what charger-level data provides that meter-level data cannot, and why Evergy requires site hosts to provide "all utilization data, without restriction". Can you respond to these questions?[32]

A: Yes. First, charger-level data is requested as Evergy does not intend to require commercial customer chargers to be separately metered to receive the rebate. Therefore, all rebate recipients will be treated equitably by the requirement to provide charger-level data.

Secondly, Evergy's proposed requirement for the customer to provide utilization and session data will allow Evergy to evaluate when and how charging is occurring and

[31] Wilson Rebuttal, pp. 13,15, 21.
[32] Wilson Rebuttal, pp. 12, 15, 20.

develop ‘typical’ charging profiles to better analyze the grid impacts of broader transportation electrification; evaluate future rate designs; and future managed charging programs. The charger-level data will also be used to fulfill program reporting requirements.

Q: Does this conclude your testimony?

A: Yes.

DECLARATION OF NICK VORIS

County of Jackson)
) ss
State of Missouri)

Nick Voris, being duly sworn, deposes and says that the information accompanying the attached testimony was prepared by his or under his direction and supervision.

Under penalty of perjury, I declare that the foregoing is true and correct to the best of my knowledge and belief.[1]

Evergy, Inc.

Nick Voris, Declarant

[1] *See* Letter from the Commission, dated March 24, 2020: "[A]ny person may file an affidavit in any matter before the Commission without being notarized so long as the affidavit contains the following declaration: ['']Under penalty of perjury, I declare that the foregoing is true and correct to the best of my knowledge and belief.['] _____ Signature of Declarant[.] This guidance applies both to pleadings filed in cases before the Commission and to required annual reports and statements of income."

Evergy Transportation Electrification Filing - Proposed Program/Component Summary

	Residential Customer EV Outlet Rebate	Residential Developer EV Outlet Rebate	Commercial EV Charger Rebate	Electric Transit Service (ETS) Rate	Business EV Charging Service (BEVCS) Rate	Education & Administration	CCN
Intended Outcomes	Enable grid management; affordability & access The rebate will reduce the costs associated with enabling Level 2 EV charging installation at home, which provides customers with the ability to charge EVs in less time using a more energy-efficient charger (compared to Level 1). L2 charging enables EVs to charge sufficiently in the overnight hours (off peak) more effectively than using L1.	Enable grid management; affordability & access The rebate will reduce the costs associated with enabling L2 EV charging at home, which provides customers with the ability to charge EVs faster and more efficiently than L1 charging. By targeting new homes, Evergy will help to ensure homes are pre-wired for EV charging during construction, which will save costly upgrades for homeowners later. The program also seeks to enhance relationships with home developers and educate builders about the benefits of EV-ready construction.	Support EV adoption; support underserved customers; affordability & access The rebates will reduce the costs associated with EV charging installations at a variety of locations (highway, public, workplace, fleet, and multi-family) by providing a rebate toward the make-ready infrastructure and equipment costs. The program will also allow Evergy to better understand where EV charging is occurring on the system, which will enable further load analysis and customer targeting. The program design is intended to be future-looking and incentivize smart, network-capable chargers to enable controllable load management regardless of what type of L2 or DCFC charger is installed.	Support EV adoption; enable grid management; support underserved customers; affordability & access The ETS rate will encourage customers to shift EV charging to off-peak times while better aligning the cost of charging electric transit vehicles with the cost causation from the grid. The rate offers customers potentially lower and more predictable fuel costs for their electrified transit fleets, which will help support agencies seeking to electrify their fleets. The rate will also allow Evergy to better understand where EV charging is occurring on the system, which will enable further load analysis and customer targeting at a time when transit fleet electrification is expected to grow. Additionally, the rate mitigates adverse grid impacts from EV charging, increases grid utilization, and creates downward pressure on rates.	Support EV adoption; enable grid management; support underserved customers; affordability & access The BEVCS rate will encourage customers to shift EV charging to off-peak times while better aligning the cost of charging EV with the cost causation from the grid. The rate offers customers potentially lower and more predictable fuel costs, which will help customers maximize operational savings of EVs. The rate will also allow Evergy to better understand where EV charging is occurring on the system, which will enable further load analysis and customer targeting at a time when EV adoption is expected to grow. Additionally, the rate mitigates adverse grid impacts from EV charging, increases grid utilization, and creates downward pressure on rates.	Support EV adoption; enable grid management; support underserved customers; affordability & access The proposed portfolio will include customer education, outreach, and support to encourage EV adoption and participation in Evergy's TE programs. This component will ensure that customers have the latest information regarding Evergy's EV rebates and rates, as well as the benefits of EVs. Evergy will offer technical assistance to help customers navigate EV-related decisions and to maximize the benefits of EV adoption.	Support EV adoption; support underserved customers; affordability & access
Objective (see Appendix A of the testimony report)							
Measure	Dedicated 240V, (40A or greater) circuit, including NEMA 14-50 outlet	Dedicated 240V, (40A or greater) circuit, including NEMA 14-50 outlet	Rebate support for installed customer infrastructure costs and qualified EVSE Rebate of $2500 per port for L2 and $20,000 per unit for DCFC, capped at between $25,000-$65,000 per premise (depending on site type)	N/A	N/A	N/A	N/A
Incentive	50% of the installation costs up to $500/outlet	$250 for one outlet installed per home		N/A	N/A	N/A	Utility owned and operated charging infrastructure
Est. Average Incentive	$350	$250	$46,705 per site	N/A	N/A	N/A	N/A N/A
Estimated Participation	Rebates/Customers MO Metro: 1300 MO West: 700 MO Total: 2000	Rebates/Homes MO Metro: 125 MO West: 225 MO Total: 350	MO Metro: 130 sites MO West: 75 sites MO Total: 205 sites *See Commercial Detail tab*	Participation is limited to transit customers and is expected to be low, particularly during the initial years of rate availability.	Participation is limited to commercial customers with electrified fleets and is expected to be low, particularly in initial years of rate availability.	N/A	MO Metro: 50 streetlight sites (L2), 4 TNC (1 DCFC each) MO West: 8 highway corridor (2 L2 ports + 2 DCFC at each)
Estimated Program Budget (Request)	MO Metro: $650,000 MO West: $350,000 MO Total: $1M	MO Metro: $31,250 MO West: $56,250 MO Total: $87,500	MO Metro: $6.5M MO West: $3.5M MO Total: $10M *See Commercial Detail tab*	N/A - see admin & education	N/A - see admin & education	Estimated as 15% of the total five-year pilot program budget, totaling: MO Metro: $1.1M MO West: $586,000 MO Total: $1.6M	MO Metro: $1.2M MO West: $1.6M MO Total: $2.8M
Other Estimated Costs	Evergy estimates that 5% of residential charging installations in existing homes would require a utility facility upgrade at an average cost of $1,000	N/A	O&M of utility infrastructure estimated to be 2.49% of capital investment in MO Metro and 2.14% in MO West. See *Commercial Detail* tab for breakdown of line extention cost estimates.	N/A	N/A	N/A	See "CCN Cost" slides included with Tech Conf #3 Meeting Guide
Variable Admin Cost (also in	$23.70 per rebate	$23.70 per rebate	$28.46 per incentive	N/A	N/A	N/A	N/A
Estimated Avoided Costs	TRC = 1.99/1.97 (Metro/West)	N/A	N/A	TBD	TBD	N/A	N/A

Evergy Transportation Electrification Filing - Proposed Program/Component Summary							
	Residential Customer EV Outlet Rebate	**Residential Developer EV Outlet Rebate**	**Commercial EV Charger Rebate**	**Electric Transit Service (ETS) Rate**	**Business EV Charging Service (BEVCS) Rate**	**Education & Administration**	**CCN**
Estimated New Revenues	N/A	N/A	MO West: approximate $71.2M (NPV) in projected retail electricity sales associated with EVs (based on growth to an estimated 25,074 EVs in 2031) under a medium EV adoption scenario. MO Metro: approximately $118M (NPV) in projected retail electricity sales associated with EVs (based on growth to an estimated 38,262 EVs in 2031) under a medium EV adoption scenario.				
Evaluation/Data Collection	Influence customers to upgrade outlet Drive off-peak charging Refine AMI data disaggregation algorithms Understand total installation and make-ready costs	Influence developers to install EV-ready outlets Build awareness with developers and homeowners	Influence commercial EVSE installations in high priority locations and underserved use cases Understand utilization to inform load analysis Understand make-ready costs	Understand business case for electric fleets Drive off-peak charging Understand behavior to inform load analysis Inform design of permanent rate structure by comparing customer needs with cost to serve	Understand business case for electric fleets Drive off-peak charging Understand behavior to inform load analysis Inform design of permanent rate structure by comparing customer needs with cost to serve		CCN expansion will allow Evergy to continue to collect and analyze charger utilization data for various use cases, better understand where EV charging is occurring on the system, and enable further load analysis to support grid management activities.
Example KPIs	Number of rebates/homes Total installation cost Total $ awarded Number of customers who enroll in CCN and/or TOU after receiving the rebate Charging Behavior Indicators	Number of rebates/homes Total $ awarded Cost to developer to install	Number of rebates, number/type of ports Total $ awarded kWh usage / charging sessions Station location	Number of customers enrolled Growth of enrollment over time kWh delivered under tariff Fleet size/number of vehicles served Percent of eligible transit fleets enrolled	Number of customers enrolled Growth of enrollment over time kWh delivered under tariff Fleet size/number of vehicles served		kWh usage/ charging sessions Charging load profiles

Evergy Missouri Metro
Case Name: 2021 Evergy Efficient Electrification
Case Number: ET-2021-0151

Response to Lange Sarah Interrogatories - MPSC_20210226
Date of Response:

Question:0003
What are the learning objectives associated with each of the proposed pilot programs? Data Request submitted by Sarah Lange (sarah.lange@psc.mo.gov).

RESPONSE: (do not edit or delete this line or anything above this)

Evergy has identified the following initial learning objectives for the proposed pilot programs. Evergy recognizes that learning objectives could evolve to meet emerging customer and market needs, incorporate stakeholder priorities, and expand initial observations. Given the large amount of data these programs will generate, an external evaluator might be needed to assist Evergy with effectively understanding the pilot program results and using the data to inform future programs.

a. **Residential Customer EV Outlet Rebate**
   1. Evaluate how effective the incentive was in influencing customers to upgrade to an EV outlet
   2. Evaluate how effective the installation of the EV outlet in residential homes was in driving off peak charging behavior
   3. Utilize EV customer data to refine our AMI data disaggregation algorithms (differentiate EV charging from the balance of the household use)
   4. Track and evaluate customer costs to better understand 'make ready' costs and the drivers to the variation

b. Residential Developer EV Outlet Rebate
   1. Evaluate how effective the incentive was in influencing developers/builders to include an EV ready outlet in new residential construction
   2. Evaluate the effectiveness of building awareness with developers/builders of the value of new homes built to be EV Ready

c. **Commercial EV Charger Rebate**
   1. Evaluate how effective the incentive was in influencing commercial installation of charging stations along highway corridors, workplaces, fleet, and multi family dwelling units
   2. Evaluate charging utilization data collected to better understand where EV charging is occurring on the system which will enable further:
      a. Load analysis
      b. Customer targeting
      c. Charging profile evaluation of highway corridors, workplaces, fleet, and multi family dwelling units
   3. Evaluate if customer engagement with rebate process engages the utility earlier in the planning process so customers are better informed upfront.
   4. Evaluate if customer engagement with rebate process strengthens the partnership with the utility to capture data and insights for ongoing charging needs, estimated

number of EVs served, and build use case profiles that can be applied to future customers
5. Track and evaluate customer costs to better understand 'make ready' costs and the drivers to the variation

d. Electric Transit Service Rate

1. Evaluate how effective the Electric Transit Service rate was in informing the business case/or grant application for electric transit buses
2. Appraise the effectiveness of the Electric Transit Service rate in driving off-peak charging
3. Evaluate charging utilization/impacts on the utility grid for grid management.
4. Evaluate whether the pilot rate meets customer's emerging needs and identify potential improvements for a permanent rate
5. Assess the rate structure's ability to match the customer needs with cost to serve

e. Business EV Charging Service Rate

1. Evaluate how effective the Business EV Charging Service rate was in informing the business case/or grant application for electric vehicles
2. Appraise the effectiveness of the Business EV Charging Service rate in driving off-peak charging
3. Evaluate charging utilization/impacts on the utility grid for grid management.
4. Evaluate whether the pilot rate meets customer's emerging needs and identify potential improvements for a permanent rate
5. Assess the rate structure's ability to match the customer needs with cost to serve

Response provided by: Wendy Marine

Attachment: Q0003_Verification.pdf

Verification of Response

Kansas City Power & Light Company

AND

KCP&L Greater Missouri Operations

Docket No. ET-2021-0151

The response to Data Request # 0003 is true and accurate to the best of my knowledge and belief.

Signed: Brad Lutz

Title: Sr. Mgr. Regulatory Affairs

Date: March 18, 2021